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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No.: 09/664,390 Group Art Unit: 1724

Inventors: Notaro et al Filed: 9/18/2000

Title: LOW VOID ADSORPTION SYSTEMS AND USES THEREOF Examiner: SPITZER

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AMENDMENT

This is in response to the Office Action mailed December 12, 2001. A three-months extension of time is attached hereto in duplicate.

In the specification:

Please amend the specification as follows:

On Page 10, fourth paragraph:

Figure 7 is a graph depicting the void influence on recovery (solid line) and power (dotted line). Case A is the prior art (as shown in Figure 1) but with a fast cycle time (approximately 2 seconds), low recovery and high power. Case B is the present invention with a reduced distribution pipe void volume as shown in Figure 2b. Case C is the present invention with a flat header as shown in Figure 2d. The two-bed system has a high pressure equal to 1.5 bars and a low pressure equal to 0.3 bars, an O_2 purity equal to 90% and a cycle time equal to approximately 1 to 2 seconds.

Page 23, first paragraph:

Figure 7 illustrates the influence of the void volume on the performance of fast cycle processes. Given, for example, a conventional axial-bed PSA system (such as that shown in Figure 1) with a cycle time of about 10 seconds and a void volume of about 14%. In order to reduce cycle time to 2 seconds, the bed length must be reduced to one-fifth of its original size. Such a reduction in bed length corresponds to a void volume increase of about 70%. With such a large void volume, oxygen recovery will decrease to about 20%, as indicated by case A1 of Figure 7. Therefore, a conventional bed configuration cannot achieve fast cycle times without greatly compromising product recovery.

Page 23, paragraph two:

By contrast, using the configuration disclosed in the present invention, the distribution pipes can be avoided as in Figure 2b, resulting in a reduction of the void volume to about 50%. Such a reduction increases recovery to about 25%, as indicated by case B1 in Figure 7.